

## CLAIMS

What is claimed is:

1. Apparatus for the classification of physiological events on the basis of physiological signals which represent or constitute the physiological events by means of a probabilistic neural network (5) including:

- a probabilistic neural network (5) which is adapted to receive a set of values representing the physiological signal and which contains a number of event classes which represent physiological events and which are respectively determined by a number of comparative values, which network is adapted on the basis of the comparison of the set of values with the comparative values to implement an association of the physiological signal represented by the set of values with one of the event classes, and

- an updating unit (10) connected to the probabilistic neural network (5) for updating the comparative values of an event class on the basis of the set of values of at least one physiological signal which has been associated with said event class in a preceding association operation.

2. An apparatus as set forth in claim 1 wherein the updating unit (10) is so designed that upon updating of the comparative values an average value is formed from a number of value sets which have previously resulted in an association of the physiological signals which they represent with the event class to be updated and wherein the updating operation is effected on the basis of the average value formed in that way.

3. An apparatus as set forth in claim 1 wherein the updating unit (10) is so designed that upon updating of the comparative values exponential weighting of a number of value sets which have previously resulted in an association of the physiological signals which they represent with the event class to be updated is effected and wherein the updating operation is effected on the basis of the exponentially weighted value sets.

4. An apparatus as set forth in one of claims 1 through 3 wherein the updating unit (10) is so designed that updating of an event class is effected after the association of a n-th value set with said event class, wherein that defines a predetermined number of value sets.

5. An apparatus as set forth in claim 4 characterized in that different values for n are to be associated with different event classes.

6. An apparatus as set forth in one of the preceding claims which also includes:

- a signal input for the input of a physiological signal; and

- a transformation unit (3) which is connected to the signal input for receiving the physiological signal and which is adapted to implement a transformation of the physiological signal in such a way that as the output signal it outputs a number of values representing the physiological signal and based on the transformation operation; wherein the probabilistic neural network (5) is connected to the transformation unit (3) for receiving the values as the value set.

7. An apparatus as set forth in claim 6 characterized in that the transformation unit (3) is adapted for executing the transformation operation on the basis of wavelets and a transformation rule determining the values to be outputted using the wavelets.

8. An implantable medical device characterized in that it is provided with an apparatus for the classification of physiological events as set forth in one of claims 1 through 7.

9. An implantable medical device as set forth in claim 8 characterized in that it is in the form of a cardiac pacemaker or defibrillator.